

Jacobi (Mary P.)

THE PROPHYLAXIS OF INSANITY

BY

✓
MARY PUTNAM JACOBI, M.D.

NEW YORK



[Reprinted from the ARCHIVES OF MEDICINE, October, 1881]

NEW YORK

G. P. PUTNAM'S SONS

27 & 29 WEST 23D STREET

1881



THE PROPHYLAXIS OF INSANITY.*

By MARY PUTNAM JACOBI, M. D.

A TERRIFIED popular imagination still pictures insanity as some mysterious and monstrous incubus, coming from distant regions of darkness to crush out human reason. In reality, however, insanity means a complex multitude of morbid states, varying indefinitely in form and intensity, but all composed of elements which preëxist in health. This fact affords a basis for prophylaxis, for it indicates the possibility of detecting these elements and, to a certain extent, of anticipating their morbid combinations.

There are as many degrees in the soundness of men's minds as in the soundness of their digestions. Study of the organism of the family, sometimes in several generations, often serves to detect flaws in the individual organization otherwise too minute for notice. It is to the family organism that especially applies the doctrine of the blending of apparently opposite elements,—as genius and insanity, both springing from an unstable equilibrium of the nervous system. These elements sometimes, though rarely, blend in the same person. But far more frequently it is inheritance from the undeveloped side of an organization of genius which results in an organization of imbecility.

* A portion of a paper read before the American Social Science Association, at Saratoga, Wednesday, September 7, 1881.

Reprinted from the ARCHIVES OF MEDICINE, Vol. vi, No. 2, October, 1881.

The original organization gives the physical substratum ; upon this the succession of psychic processes, which begin with the dawn of consciousness, builds up the mental individuality. Ideas, feelings, volitions, enter liberally into the structure of the mind,—are the constituent elements of which this has been built up. Permit me to quote the description given by the celebrated Griesinger :

“Self-consciousness,—the Ego,—” he says, “is an abstraction in which are contained, closely welded together, residue of all the sensibilities, thoughts, and volitions which the individual has ever experienced.

“* * * These are gradually aggregated into complex masses of conceptions, varying in density and resistance, according to the internal cohesion of their elements.

* * * The character of the individual varies with their relative predominance ; their constant struggle with one another constitutes the internal conflict which is essential to normal mental existence.

“* * * The development of insane delusions follows the same laws as that of healthy ideas. New sensibilities, volitions, and conceptions present themselves to the pre-existing conception-masses, are at first repelled by these, gradually penetrate them, and if the cohesiveness of the latter be weak or weakened, assimilate to them until the Ego is transformed or completely falsified. *In this process the previous composition of the Ego is seen to be of immense importance.* A weak (loosely knit) nature will, much earlier than a strong one, be overborne by anomalous conceptions.”¹

Thus, at any given moment, the mental organism consists not only of its physical substratum, but of that *and* of the long series of psychic processes which have been built up on it. It is a fundamental law of all organized

¹ “Pathologie und Therapie der Psychischen Krankheiten,” 1867.

tissues, and most conspicuously illustrated in the brain, that function not only depends upon structure, but ends by modifying it. Hence, morbid modifications of psychic processes may be initiated either in them or in the physical substratum. This is equivalent to the previous assertion that insanity may be determined either by a psychic or a somatic cause, but generally requires the concurrence of both.

In the existing professional and popular reaction against the old puerilities of the exclusively moral theory of insanity, these facts are often overlooked or misunderstood. The question of prophylaxis has become narrowed down to the question of prophylaxis in marriage. This is not only much too narrow, and the social difficulties in the way very great, but the rules for practice have been by no means worked out, and many of those which have been suggested are erroneous or superficial.

The fact that the previous constitution of the mental conception-masses modifies the process of their falsification under the influence of mental disease, should suggest an effort to so build up this constitution that it may be fitted to resist strain. For the formation of the conception-masses is far from being a spontaneous or self-directed process. No ideas can enter the forming mind except from without, from communication with its fellows, or from the transformation of sense impressions. It is therefore largely in our power to determine the nature of the ideas of any child who is *thoroughly* guarded from his cradle. Again, the will develops in the mould it makes for itself by successive volitions; these may to a considerable extent be commanded or contrived. It follows that, hand in hand with prophylactic treatment of the physical substratum of the inherited nervous organization, should go strenuous educational prophylaxis of the psychic processes.

But there is needed a far-sighted, comprehensive, minute education, which should begin with the dawn of consciousness, and extend, if possible, through life. It should have a detailed objective or reason for each step in the elementary lesions of the disease which menaces the person, or in the elementary defects of his menaced constitution.

To assert that moral prophylaxis is useless because insanity is merely a symptom of physical disease, is to contradict the facts of the double nature and double origin of the psychoses which are admitted by the best authorities. Educational prophylaxis could only be expected to contribute one factor toward the solution of the problem; but it is one, and all the more worth considering, because at present it is so generally neglected.

A more plausible objection is that the moral substratum of minds predisposed to insanity is peculiarly perverted, so that they are insusceptible of education. That it is precisely this insusceptibility which especially manifests their predisposition.

Finally, it may be alleged that the traits of character which exist in a person before an attack of insanity, can offer no guide for treatment, because in the attack these are all reversed.

This last objection is met by the answer that the prophylaxis of mental, as of somatic diseases, is to be directed, not to the symptoms of the malady, but to the constitutional defects which facilitate its invasion, and to the circumstances of the surrounding medium which become the occasioning cause. Thus, it is known that under a great weight of responsibility a cheerful-tempered, but feeble-willed person may break down into melancholia. The prophylactic training should therefore be directed, not toward making such a person cheerful, but toward inuring

him, by gradual practice, to bear responsibility. And so for other analogous cases.

The ideal prophylaxis implies that in neuropathic families the entire life of each child, its physical and moral training, and every detail of its social surroundings, should be planned with a view to avert mental disease. According to the degree of predisposition, this is liable to occur spontaneously at ordinary physiological crises, as puberty, menstruation, pregnancy, parturition, lactation, the climacteric; or only under the influence of external causes. In the latter case, the far-sighted disposition of the social medium of a predisposed person may often avert an attack of insanity by averting the cause.

It is evident that the far-sighted and self-controlled guardianship required should be entrusted to a person not sharing the family constitution; to the parent who may be exempt, or, if both are affected, to a person who is not a relative at all. For the present purpose only a word is needed in regard to the main details of physical prophylaxis.

They are: abundance of nitrogenous food; daily cold bathing; pure air; daily exercise in it, especially by means of cultivation of the ground, the cardinal employment for the body and mind of neurotics.

A fifth point of great importance is rest; equally so for an immediately threatened attack, and in the life-long management of susceptible persons. For them over-exhaustion and fatigue are always to be dreaded, and to these they are particularly prone, from the extremely deficient power of resistance of their nervous system. It is worth noticing that it is neuropathic families more than any others who are liable to neglect the foregoing precautions.

For effective moral prophylaxis, it is desirable that a certain amount of information be popularly diffused, to facili-

tate the awakening of domestic solicitude, the recognition of incipient insanity, and of the slighter but significant marks of the insane temperament. This may prove as useful as it has already done in regard to scrofula, rhachitis, tuberculosis, and other constitutional diseases.

Krafft-Ebing ranks severe and congenital hysteria with the psychic degenerations, and shows it to be the forerunner of much real insanity.¹ Knowledge of this fact might do much to check the capricious and vacillating treatment to which youthful hysterical patients are generally subjected. On the other hand, in the permanent prophylaxis for adult life, which must so largely be committed to the patient, it is extremely useful to be aware of the relative benignity of the very forms of insanity which usually excite the most alarm. Acute melancholia, mania, and primary dementia are classed with the functional disorders or psycho-neuroses, tending, under favorable circumstances, to spontaneous recovery. This knowledge might help to avert at least those distressing suicides which are committed, not from insane impulses, but under the dread of impending insanity. They are far from proving that this has already set in, for it is really not irrational to choose death in preference to permanent dementia.

The following traits are signalized as characteristic of the neuropathic constitution—constitution which affords the main physical and moral basis for the development of insanity.

In neuropathic families the children early manifest a remarkable nervous excitability, with tendency to severe neurotic disorders at physiological crises, as convulsions during dentition, neuralgias at menstruation. The establishment of menstruation is often premature, often preceded and followed by profound chloro-anæmia. The

¹ This statement is not made in regard to acquired hysteria, symptomatic of uterine or other diseases.

cerebral functions are easily disturbed, slight physical disorders being attended by somnolence, delirium, hallucinations. The nervous system seems to be everywhere hyperæsthetic. Reaction to either pleasing or displeasing impressions is excessive; there are abundant reflex neuralgias, vaso-motor irritations. Pallor, blushing, palpitations, præcordial anxiety, are caused by trifling moral excitement, or by agents lowering the tone of the vaso-motor nerves, as heat or alcohol.

The sexual instincts are precocious and often perverted. The establishment of puberty is often the sign for the development of spinal irritation, hysteria, or epilepsy.

The psychic characteristics correspond. The disposition is strikingly irritable and touchy; psychic pain arises for trifling cause; at the least occasion the most vivid emotions are excited. The subjects of this temperament alternate rapidly from one extreme to the other; their sympathies and antipathies are alike intense; their entire life is passed between periods of exaltation and depression, leaving scarcely any room for healthy indifference.

On the other hand, there is a remarkable inexcitability of ethical feeling. Vanity, egotism, and a jealous suspiciousness are common, and the temper is often violent. The mind is often obviously feeble, with few and monotonous ideas, and sluggish association of them. At other times ideas are readily excited, the imagination is active, even to the production of hallucinations; but mental activity is ineffective because of the rapidity with which it leads to exhaustion. There is no time to complete any thing before the energies flag. The will is equally deceptive in its apparent exuberance and real futility. Its capricious energy and innate weakness is a fit counterpart for the one-sided talent or even whimsical genius which often marks the intelligence.¹

¹ Abridged from Krafft-Ebing.

This disposition constitutes the moral substratum which, together with the physical constitution, affords the constitutional basis for psychic disease. In it two elements are conspicuous: a profound and often unconscious egotism, resulting from the predominance of the instincts over the faculties for external relations; and a constant ineffectiveness in the maintenance of these relations,—in other words, abnormal weakness of the will. These elements reappear in insane diseases. Egotism is the nucleus of the exactions of hysteria, and determines the form of all delusions, which, whether primary, or engendered from emotional insanity, invariably centre on the depression or exaltation of self. The suspiciousness and violent temper so frequent in the neuropathic, develops easily into the technical delirium of persecution or of quarrelsomeness. The psychic hyperæsthesia common to several psychoses, but typical of melancholia, depends, on the one hand, on the same primitive egotism; on the other hand, on the weakness of the will, on account of which the normal channel from feeling to action is blocked. Pent-up feeling is always hyperæsthetic; psychic pain is the correlative of external ineffectiveness, even when not directly caused by it.

Diminished interest in external relations results in psychic anæsthesia, especially in regard to moral appreciations. This anæsthesia is again the direct correlative of the excess of instinctive and personal interests, and of the weakness of the will which fails to enlarge the scope of the personality, as it is naturally destined to do.

When the will is feeble, sluggish, inert, the tendency of the mind to sink under pressure, and especially under the weight of responsibility, is very great. "The fact of human freedom," says Griesinger, "is the fact of the conflict in consciousness of opposing ideas, and of the termination of

the strife by the conception-mass representing the Ego, which assimilates part of the ideas, and represses the rest." Feeble natures cannot bear this conflict without excessive pain, to which, at last, they not unfrequently succumb. In melancholia, the consciousness of diminished will power is a prominent and most painful symptom of the morbid state.

The feebleness of the will may be manifested, not by sluggishness, but by infinite caprice and incessant vacillations. This may reflect a torrent of incoherent ideas; or it may represent so rapid a transformation of an idea into an impulse, that the latter alone seems to exist. Here the channel from the internal to the external world is not obstructed; its resistance, on the contrary, is abnormally diminished; yet the volition is still ineffective. Effective volitions demand distinct and correct ideas of the external medium upon which they are to be expended. But one of the most essential elements of insanity, and of the constitution predisposing to it, is the diminution in the number, force, variety, and accuracy of the ideas held concerning the external world, and on the relations of the individual to it. This monotony of ideas is sometimes, before the attack, concealed behind desultory verbiage. Sometimes, during the immediate prodromata of an attack, it is temporarily replaced, even in feeble-minded people, by an unwonted vivacity and power. Completed delirium, however, is always monotonous. Correlated to the egotistic instinct, it always centres on the personality of the individual, which is outrageously oppressed or illimitably exalted. The ideas are few; their associations sluggish; memory and attention are weakened even to extinction.

A deficient power of attention is generally a marked characteristic of the neuropathic state; it lies at the basis of the irritable impatience which is so frequent in it. This leads to the formation of loosely knit conception-masses,

ready to assimilate anomalous notions. The mind is naturally credulous; unapt for criticism. It offers less resistance than another to the invasion of false ideas.

Thus the three great elements in the moral substratum of a person predisposed to insanity, are: the egotistical predominance of the instincts over the faculties of reflection and external relation; the ineffectiveness of the will, even when this is impulsive or violent; the inaptitude for ideas, resulting in their poverty and imperfect combination. The whole nature is shrunken upon itself; there is not enough vital turgescence to expand it to its normal circumference and to the points of contact of this with the external world.

The cardinal point in the management of such natures is, therefore, the expansion of their shrunken individuality. This is to be effected by means of a strenuous educational system, directed at once toward the repression of the egotistic instincts, the enrichment and systematization of the ideas, and, through multiplication of acts and external relations, the energizing of the feeble will.

The scope of the method will be made clearer by some examples. Thus: grief is an efficient moral cause of insanity. That it does not more often render people insane, is indeed a remarkable proof of the resources of the healthy human organism. However various the occasions for grief, yet in so far as these all imply personal loss, the principle of their influence is always the same.

The mind becomes so concentrated on the thought of this loss, that the latter acquires the ascendancy of a fixed idea. Apart from physical disease, the inability of diversion is great, in proportion to the habitual poverty and monotony of ideas; to the fewness of relations with the external world; to the preponderance of habitual interest in matters relating to self: to the inertness of the will, unable by

vigorous action to expend externally irritations of psychic pain.

Similarly, when disappointment or humiliations, great or small, real or fancied, are the cause, or injuries, or the suspicion of injuries, the power of the predisposition and of the occasioning cause being constantly in inverse relation to each other, we reach a grade of exaggerated hysteria or hypochondria where the egotistic instincts become able of themselves to generate melancholy, irritability, and delusions.

In another class of causations, shock plays a prominent part. Inability to resist shock is partly proportioned to poverty of ideas, which permit overwhelming surprises; partly to habitually unrestrained emotionality; partly to the passivity which prevents quick reaction. Analogous is the effect of strain, of excessive anxiety, of long-standing care and responsibilities. Healthy and justly proportioned indifference is essential to healthy equilibrium; an excess of sensibility over reflection or will power, predisposes to insanity under sufficient irritation. All experience shows that an excess of egotistic sensibility is far more dangerous than an excess of sympathy, the latter being indeed extremely rare in the neuropathic constitution. It may become a cause in non-constitutional insanity. Another line of causation is that in the direction of ideas, where the invasion of false ideas is facilitated by habits of credulity, superficial reasoning, loosely knit conception-masses. An unreflecting enthusiasm easily embraces exciting doctrines, as in the various religious or political manias, or is carried away by suggestions which covertly appeal to the egotistic instincts, flattering or alarming them, or submits to incongruous beliefs, as in the so-called partial insanity or monomania,

Perhaps none of the details of an educational prophylaxis

are foreign to the principles theoretically advocated for ordinary education. But in this they are applied, if at all, in a manner so lukewarm and vague as would render them useless for so grave a problem as the prophylaxis of insanity. To consider these principles in the order already enumerated: the repression of egotistic instincts demands effort in two directions. Negatively, these are to be atrophied by a studied atmosphere of indifference to caprice, violent tempers, ridiculous pretensions, exorbitant exactions; none of which are allowed to be gratified. In this permanent atmosphere, created by the mind controlling and guarding the child, he may learn to appreciate his insignificance relatively to the external world. Toward this and its interests he is secretly apathetic, except so far as they may be made subservient to his own vanity. The principle of justice, based on the simple fact of primitive equalities, must be profoundly in-wrought, by practical exercises, into the consciousness of the neurotic. He is naturally inclined to submit every thing to the test of his sympathies and antipathies; and the cultivated habit of reference to simple justice instead, will save him from innumerable entanglements, perplexities, and agitations, most dangerous to his mental equilibrium.

The multiplicity of human interests, the vastness and importance of the interests of the world, as compared with his own, may be impressed upon the child's imagination in many ways, if ingenuity be not lacking. The incidents, utilized or contrived, necessarily vary with the age of the child, but the same complex end is always to be held in view: restoration of the normal proportion between egotistic instincts and faculties of relation, and excitation of healthful ideas through healthful practical experiences and association with the fortunes of his fellows. Sometimes, together with mental vivacity, sometimes with mental in-

ertness, the mind of the neuropathic individual is apt to be really indifferent to intellectual relations, to knowledge for its own sake, to disinterested curiosity, the happiest appanage of a sound intelligence. Interested motives must be skilfully supplied, sufficiently to provide for the acquisition of knowledge essential to the enrichment of ideas, yet with caution, lest vanity and *amour propre* be unduly stimulated.

The acquisition of knowledge, the training in morals, the formation of habits of thought, must all be centred upon practical activities. It is the proper development of these which is to be relied upon to energize the feeble will; to accustom it to effectiveness by training to productive industry; to broaden and deepen the channels from internal concepts to impulses; to provide thus for the overflow of dangerous irritations; to check the flightiness, frequent forerunner of insane impulse; to widen the range of interests and of correlative ideas, and hence of resource against shock, vexation, and misfortune; to moderate inordinate vanity by submitting its pretensions to practical tests; to regulate moods by habits of daily labor; and to enlarge the entire personality, for the future as well as the present, by insuring, from internal pressure, the creation of a permanent career. This latter element of prophylaxis might well save from insanity many of the "lazy and languishing young ladies" whom Mortimer Granville complains of as filling private insane asylums.

It is not enough to attempt to widen the range of ideas. In some directions, and unguarded, this proves simply disastrous to persons of innately feeble intelligence. They must be trained in the formation of practical concepts; associated as much as possible with practical facts, with sense impressions, and with experiences in action. Clearness, definiteness of ideas, their frequent association with images, af-

ford no inconsiderable safeguard against morbid mental confusion. Similarly the careful training of the senses in various techniques contributes much toward the steady outward direction of nervous energies, which is needed to counteract the tendencies to internal concentration.

In this connection gymnastic training has a mental as well as a physical influence. It would be difficult to prove that such training of the periphery of the nervous system could counteract the development of hallucinations, which are caused by central irritation of the sensory centres. But it certainly lies in the line of such counteraction.

If it be important to fill the mind with concrete ideas, it is at least as important that these be correct, and not liable to be uprooted in later life. This liability constitutes a real danger in the notions of popular theology, which are so loosely allowed to be acquired even by guardians who do not believe in them. To persons predisposed to insanity, the uprooting of fundamental ideas can by no means be performed with impunity. It is important to train such persons early in a sound and simple philosophy, which shall provide a firm basis for thought and life without inviting to speculative thinking.

Finally, since the object to be gained is firmness and strength for the mind in dealing with its own concepts, practical exercises in the elementary intellectual acts are extremely important. These are but feebly carried out in ordinary schools, because the object in view is not distinctly perceived or firmly grasped. The first signs of failing mental power are, loss of memory, of power of association of ideas, of summoning contrasting ideas into consciousness, of reproducing or comparing or criticising them. It is indicated, therefore, to train the mind in advance to profound habituation with these various processes. Such training will avail nothing when physical lesions have begun to de-

stroy the intellectual mechanisms. But it may avail much in the cases where the integrity of these first becomes impaired from obstruction of function and psychic disability.

One other detail deserves notice, for it rarely receives attention. In minds predisposed to insanity there is often, perhaps always, a marked deficiency of elasticity. An impression sinks and remains; the mind cannot disengage itself nor recover its tone; it cannot pass quickly enough into the contrasting mood: a capacity to do this is the natural provision against strain: it probably corresponds to a law of rhythmic action in the physical mechanisms of thought. This capacity should, therefore, be carefully cultivated by encouraging alternations of attention at the first sign of fatigue. The contrary practice of forcing an immature mind to continued attention while under the influence of fatigue, instead of teaching it how to quickly change, is the habit of common-place education. Injurious to all, it is especially so to persons predisposed to depressing forms of insanity. It exhausts still further the elasticity in which they are naturally deficient.

The management of the perverted instincts of neuropathic constitutions may, when these are advanced in deterioration, prove a hopeless task. At a less severe degree, however, many bad propensities may be held in check by a skilful combination of the methods of punishment,—emulation and distracted attention.

One difficulty in guiding these cases generally lies in the fact that their pathological nature is not early recognized. Children are incessantly moralized, whose minds do not contain any conceptions of morals, and only an imperfect mechanism for ethical functions. According to the degree of imperfection, such persons must be dealt with as animals, who can certainly be trained into habitual lines of conduct, even though destitute of the corresponding abstract ideas.

One morbid appetite calls for special mention, that, namely, for alcoholic liquors. This, like the others, is often manifested early in life, and, as known, is not only a symptom of a neuropathic constitution, but, when indulged, a potent occasional cause of insanity. The management of this appetite is a most difficult problem. It has been plausibly suggested that the permanent and moderate administration of alcohol in the form of beer, might, with other treatment, help to avert the development of the irresistible craving.

Such are the abstract principles of a system of treatment which, if seriously carried out, properly associated with physical treatment, and so arranged that every other consideration should be subordinated to the attainment of its ends, should prove of real value in helping to avert many cases of insanity.

ARCHIVES OF MEDICINE FOR 1881,

A BI-MONTHLY JOURNAL,

Edited by Dr. E. C. SEGUIN, with the assistance of many prominent physicians in this country and abroad, enters upon the third year of its existence.

The **Archives of Medicine** will continue to be published every two months.

Each number is handsomely printed in large octavo form on heavy paper, and contains from 104 to 112 pages. The articles are illustrated by means of lithographs or wood-cuts wherever necessary.

It is intended to devote the whole of each number to original matter, consisting of original communications or editorial articles, reviews of books, and a record of important cases.

The Abstract Department has already been omitted in two numbers. The principal reason for this change is, that the editor believes that the profession are ready to support a journal devoted to original communications and *bona fide* reviews.

Especial attention is given to the review department, and while every pains is taken to secure the services of unprejudiced reviewers, they are asked to criticise or praise without fear or favor and to assume the responsibility of their statements by appending their initials to the reviews.

The following *Editorial Articles* have appeared during the year 1880: Mr. Lister's Antiseptic Method, by Dr. LEWIS A. STIMSON; Our Asylums as seen by a Competent Foreign Visitor, by Dr. VON DEN STEINEN; Observations on the Insane Asylums of California and Nevada, by Dr. R. W. BIRDSALL; The Right of the Insane to Liberty, by the EDITOR.

Among the *Original Articles* may be mentioned the extensive papers by Dr. N. M. SHAFFER, On the Hysterical Element in Orthopædic Surgery; by Dr. MARY PUTNAM JACOBI, On the Use of the Cold Pack, followed by Massage, in the Treatment of Anæmia; and Dr. AMIDON'S Prize Essay on the Temperature of the Head.

COLLABORATORS.

London.—Drs. J. HUGHLINGS JACKSON, J. BURDON-SANDERSON, and SYDNEY RINGER.

Paris.—Profs. J. M. CHARCOT, J. MAREY, and A. OLLIVIER.

Germany.—Prof. Dr. W. ERB, of Leipzig.

Philadelphia.—Profs. D. HAYES AGNEW, M.D., J. M. DA COSTA, M.D., WILLIAM GOODSELL, M.D., ROBERTS BARTHOLOW, M.D., S. W. GROSS, M.D., and Drs. THOS. G. MORTON, E. O. SHARESPEARE, and J. C. WILSON.

Boston.—Drs. JAMES R. CHADWICK, CHARLES P. PUTNAM, JAMES J. PUTNAM, and SAMUEL R. WEBBER.

Baltimore.—Prof. E. T. MILES, M.D., Dr. I. E. ATKINSON.

Hartford, Conn.—Dr. SAMUEL B. ST. JOHN, Dr. M. D. MANN.

Albany, N. Y.—Prof. SAMUEL B. WARD, M.D.

NEW YORK CITY AND BROOKLYN;

Prof. C. R. AGNEW, M.D., Prof. FORDYCE BARKER, M.D., Prof. FRANCIS DELAFIELD, M.D., Prof. W. D. DRAPER, M.D., Prof. AUSTIN FLINT, Sr., M.D., Prof. WILLIAM A. HAMMOND, M.D., Prof. A. JACOBI, M.D., Prof. MARY PUTNAM JACOBI, M.D., Prof. E. G. JANEWAY, M.D., Prof. E. L. KEVES, M.D., Prof. ALFRED L. LOOMIS, M.D., Prof. F. N. OTIS, M.D., Prof. M. A. Pallen, M.D., Prof. THOS. R. POOLEY, M.D., Prof. D. B. ST. J. ROOSA, M.D., Prof. H. B. SANDS, M.D., Prof. A. J. C. SKENE, M.D., Prof. R. W. TAYLOR, M.D., Prof. T. GAILLARD THOMAS, M.D., Prof. W. H. VAN BUREN, M.D., Dr. R. W. AMIDON, Dr. WM. T. BULL, A. FLOYD DELAFIELD, A.B., Dr. H. J. GARRIGUES, Dr. V. P. GIBNEY, Dr. L. CARTER GRAY, Dr. E. GRUENING, Dr. C. HEITZMANN, Dr. F. P. KINNIGUTT, Dr. JAS. R. LEAMING, Dr. C. C. LEE, Dr. P. F. MUNDE, Dr. J. C. PERRY, Dr. N. M. SHAFFER, Dr. J. C. SHAW, Dr. J. MARION SIMS, Dr. A. H. SMITH, Dr. E. C. SPITZKA, Dr. L. A. STIMSON, Dr. CLINTON WAGNER, Dr. ROBERT WATTS, Dr. DAVID WEBSTER, Dr. R. F. WEIR, Dr. T. A. MCBRIDE, and others.

Subscription, per year, \$3.00. Price, per number, 60 cts. Specimen number sent on receipt of 25 cts.

G. P. PUTNAM'S SONS, Publishers,

27 & 29 WEST 23d STREET, NEW YORK.